SEQUENCE LISTING

<110> SARCABAL, PATRICIA
CROUX, CHRISTIAN
SOUCAILLE, PHILIPPE

<120> METHOD FOR PREPARING 1,3-PROPANEDIOL BY A RECOMBINANT MICRO-ORGANISM IN THE ABSENCE OF COENZYME B12 OR ONE OF ITS PRECURSORS

<130> CHEP:004US

<140> 10/043,639
<141> 2002-01-09

<150> PCT/FR00/01981
<151> 2000-07-07

<150> FR 99/08939
<151> 1999-07-09

<160> 14

<170> PatentIn Ver. 2.1

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Arg Asp Gln Glu Leu Ile Val Gly Ser Leu Thr Lys Glu Pro Arg Ser
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Ser Gln Val Phe Pro Glu Phe Ser Asn Lys Trp Leu Gln Asp Glu Leu
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Asp Arg Leu Asn Lys Arg Thr Gly Asp Ala Phe Gln Ile Ser Glu Glu
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Ser Lys Glu Lys Leu Lys Asp Val Phe Glu Tyr Trp Asn Gly Lys Thr
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Ile Ala Lys Ile Cys Ser Lys Val Ser Gly Glu Gly Ala Lys Ser Phe
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Arg Asp Glu Ile Ser Thr Lys His Phe Gly Gly Tyr Pro Met Tyr Gln
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Lys Leu Ile Val Gly Gly Gln Asn Ser Glu Gly Lys Asp Ala Thr Asn
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Gln Gly Val Gly Val Ala Asn Ile Gly Asp Ser Leu Val Ala Val Lys
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Lys Ile Val Phe Asp Glu Asn Lys Ile Thr Pro Ser Glu Leu Lys Lys
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Asn Val Tyr Phe Gly Ser Leu Thr Gly Ala Thr Pro Asp Gly Arg Lys
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Ser Gly Gln Pro Leu Ala Asp Gly Val Ser Pro Ser Arg Gly Cys Asp
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Val Ser Gly Pro Thr Ala Ala Cys Asn Ser Val Ser Lys Leu Asp His
        675                 680                 685

Phe Ile Ala Ser Asn Gly Thr Leu Phe Asn Gln Lys Phe His Pro Ser
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Ala Leu Lys Gly Asp Asn Gly Leu Met Asn Leu Ser Ser Leu Ile Arg
705                 710                 715                 720

Ser Tyr Phe Asp Gln Lys Gly Phe His Val Gln Phe Asn Val Ile Asp
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<213> Clostridium butyricum

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 65                  70                  75                  80

Glu Gly Leu Lys Ile Phe Lys Glu Glu Asn Cys Asp Met Ile Val Thr
                 85                  90                  95

Val Gly Gly Gly Ser Ser His Asp Cys Gly Lys Gly Ile Gly Ile Ala
            100                 105                 110

Ala Thr His Glu Gly Asp Leu Tyr Asp Tyr Ala Gly Ile Glu Thr Leu
        115                 120                 125

Val Asn Pro Leu Pro Pro Ile Val Ala Val Asn Thr Thr Ala Gly Thr
    130                 135                 140

Ala Ser Glu Leu Thr Arg His Cys Val Leu Thr Asn Thr Lys Lys Lys
145                 150                 155                 160

Ile Lys Phe Val Ile Val Ser Trp Arg Asn Leu Pro Leu Val Ser Ile
                165                 170                 175

Asn Asp Pro Met Leu Met Val Lys Lys Pro Ala Gly Leu Thr Ala Ala
            180                 185                 190

Thr Gly Met Asp Ala Leu Thr His Ala Ile Glu Ala Tyr Val Ser Lys
        195                 200                 205

Asp Ala Asn Pro Val Thr Asp Ala Ser Ala Ile Gln Ala Ile Lys Leu
    210                 215                 220

Ile Ser Gln Asn Leu Arg Gln Ala Val Ala Leu Gly Glu Asn Leu Glu
225                 230                 235                 240

Ala Arg Glu Asn Met Ala Tyr Ala Ser Leu Leu Ala Gly Met Ala Phe
                245                 250                 255

Asn Asn Ala Asn Leu Gly Tyr Val His Ala Met Ala His Gln Leu Gly
            260                 265                 270

Gly Leu Tyr Asp Met Ala His Gly Val Ala Asn Ala Met Leu Leu Pro
        275                 280                 285

His Val Glu Arg Tyr Asn Met Leu Ser Asn Pro Lys Lys Phe Ala Asp
    290                 295                 300

Ile Ala Glu Phe Met Gly Glu Asn Ile Ser Gly Leu Ser Val Met Glu
305                 310                 315                 320

Ala Ala Glu Lys Ala Ile Asn Ala Met Phe Arg Leu Ser Glu Asp Val
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325 330 335

Gly Ile Pro Lys Ser Leu Lys Glu Met Gly Val Lys Gln Glu Asp Phe
340 345 350

Glu His Met Ala Glu Leu Ala Leu Leu Asp Gly Asn Ala Phe Ser Asn
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Pro Arg Lys Gly Asn Ala Lys Asp Ile Ile Asn Ile Phe Lys Ala Ala
370 375 380

Tyr
385

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